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# HOW A TRADITIONAL ORGANISATION MATURED A BUSINESS ANALYTICS CAPABILITY

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## **Abstract**

*This paper tells the story of how a large traditional CPG (consumer packaged goods) organisation in Ireland (HEINEKEN) established a transformative and award-winning Business Analytics (BA) capability inside a 10-year period. Through analysing this story, told through the 'lived experiences' of the HEINEKEN Ireland Data and Analytics (D&A) Manager (the lead author), the obstacles to maturing a BA capability and the strategies to overcome them are revealed across four eras (awakening, building & exploring, advancing, leveraging). The analysis is structured using the DELTA model proposed by Davenport and Harris (2017), with the 'Targets', 'Leadership', and 'Analysts' capability elements featuring prominently in the HEINEKEN Ireland story. Overall, our analysis and findings lead to seven key messages (across the DELTA capability elements) that should inform an organisation's BA strategy. These messages afford IS professionals (academics and practitioners) with the opportunity to learn from HEINEKEN Ireland's experiences as part of their evolving BA success story.*

**Keywords:** Business Analytics, Traditional Organisation, Transformation, Capability, Reflective Practice

## **1 Introduction**

Business Analytics (BA) has been attracting a lot of attention amongst both the researcher and practitioner communities in recent years, with data being described as the new oil, the new soil, the next big thing, and one of the organisation's most valuable resources (Ransbotham, Kiron and Prentice, 2016; Mikalef *et al.*, 2020; Hindle *et al.*, 2020). The organisational capability to leverage data and produce BA which are actioned to deliver improved business performance is now recognised as a competitive differentiator for organisations across most industries (Davenport, 2006; Bumblauskas *et al.*, 2017; Akhtar *et al.*, 2019), leading to senior executives making conscious efforts

to transform their organisations to become data-driven (LaValle *et al.*, 2011; Delen and Ram, 2018).

There are many terms used in the literature to refer to the use of data for decision making. Davenport and Harris (2017, p. 25) put forward their definition of BA as “*the extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and actions*” while Baesens *et al.* (2016, p. 808) define BA as “*all aspects of the data process to facilitate predictive and/or causal inference-based business decision making*”. These definitions do not distinguish between data (‘big’ or ‘small’) and include all types of analytics such as *descriptive, predictive, and prescriptive*, while emphasizing the actionability and business decision making purpose of BA. Organisational capability is an intangible concept but has been defined by Ulrich and Smallwood (2004, p. 119) as “*the collective skills, abilities, and expertise of an organization, which represent the ways that people and resources are brought together to accomplish work*”.

Despite the efforts to develop BA capability, organisations are still struggling to become data-driven and are failing in their efforts to implement BA (Smith *et al.*, 2019; Davenport and Redman, 2020; Klee, Janson and Leimeister, 2021), with issues such as organisational structures, culture, people capability, and technology getting in the way of progress (Redman, 2021; Chuah and Wong, 2011; Smith *et al.*, 2019). Many ‘traditional’ organisations, which were established long before the digital era and whose success to date has been delivered by non-digital business models, organisational structures, and culture, have been particularly slow in implementing BA (Cao and Duan, 2017), as they face the additional challenge of being impeded by the traditional structures and processes which had worked for them in past (Gust *et al.*, 2017). Nevertheless, even these traditional organisations are now looking to catch up (Angevine *et al.*, 2021) and the leading ones are demonstrating that they are able to capture value when they do successfully implement BA (Benavides *et al.*, 2017).

This paper tells the story of the HEINEKEN Ireland journey, a large traditional CPG organisation, as it established a BA capability and identifies how to overcome some of the obstacles encountered on the journey. Our motivation for such an approach is practice-inspired, as we know that “*practitioners can relate to stories*”, and this is an

effective way of “*making our research more relevant to practice*” (Myers, 2009, p. 218).

The remainder of this paper is structured as follows. In the next section we provide a background to the DELTA Model before outlining our research approach. We then present the story of HEINEKEN Ireland as it developed its BA capability and report our findings.

## **2 Background to the DELTA Model**

The concept of maturity models has been widely adopted in IS research, with numerous BA maturity models developed recently, due to the increasing focus on BA by practitioners and academics, along with the usefulness of maturity models in guiding organisations developing their BA capability (Chen and Nath, 2018). The DELTA Model as put forward by Davenport and Harris (2017) is widely acknowledged as one of the most important and strongest BA capability maturity frameworks (Cosic, Shanks and Maynard, 2015; Seddon *et al.*, 2017; Lismont *et al.*, 2017).

The DELTA model was originally developed with five elements of BA capability, namely Data, Enterprise, Leadership, Targets and Analysts, but has been subsequently updated with the addition of Technology and Analytical Techniques (Davenport and Harris, 2017). We include a brief outline of the capability elements in Table 1. According to Davenport & Harris (2017, p. 181), *for a high-performing analytical capability, all the elements of the DELTA model need to be working together*. Therefore, organisations need to adopt a holistic approach to developing their BA capability and ensure that individual elements don’t fall behind or advance too quickly (Davenport and Harris, 2017). As organisations advance from having virtually no BA capability to being true analytical competitors, there are five stages through which they can progress as identified by Davenport & Harris (2017) which are outlined in Table 2.

Capability element	Description
Data	Accessibility to high quality, diverse, dynamic data
Enterprise	BA resources managed and coordinated at an enterprise level
Leadership	Senior leaders which passionately advocate for BA and encourage a data-driven culture
Targets	Alignment of BA with strategic business priorities and focusing BA investments on the best high value areas
Analysts	Managing and developing BA talent including BA professionals and consumers of BA outputs
Technology	Providing the infrastructure, tools, and technologies to support BA
Analytical Techniques	Appropriate analytics techniques from basic descriptive techniques to advanced machine learning algorithms

**Table 1. DELTA Model BA Capability Elements**

Stage	Description
Analytically Impaired (Stage 1)	<i>Some desire to become analytical but thus far lack both the will and the skill to do so (Davenport and Harris, 2017, p. 65)</i>
Localised Analytics (Stage 2)	<i>Emphasis on reporting with pockets of analytical activity (Davenport and Harris, 2017, p. 65)</i>
Analytical Aspirations (Stage 3)	<i>Grasp the value and the promise of analytical competition, but they're in the early stages of it (Davenport and Harris, 2017, p. 64)</i>
Analytical Company (Stage 4)	<i>On the verge of analytical competition but still face a few minor hurdles to get there in full (Davenport and Harris, 2017, p. 63)</i>
Analytical Competitor (Stage 5)	<i>An organisation that uses analytics extensively and systematically to outthink and outexecute the competition (Davenport and Harris, 2017, p. 45)</i>

**Table 2. Stages of Analytical Competition**

In this paper we utilise the DELTA model as a lens to help tell the story of the HEINEKEN Ireland journey, a traditional organisation developing and maturing its BA capability. The next section presents our research approach.

### **3 Research Approach**

This research follows a ‘*reflective writing*’ approach using auto-ethnographic accounts of the lead author (c.f. Olmos-Vega *et al.*, 2022). From 2011 to 2020, the lead author was in the role of Data & Analytics (D&A) Manager within the case company (HEINEKEN Ireland). The ongoing documenting and analysis of the first author’s

personal experiences (over this ten-year period – 2011 to 2020) is a very rich source of field data. More specifically, since 2016, the lead author has also conducted a series of ‘*self-interviews*’. Self-interviews are a technique used for researchers to ask and answer their own questions and reflect on their assumptions about the topic. They are also an effective way for researchers to explore personal experiences and the theories and research that have shaped their views on their topic (c.f. Olmos-Vega *et al.*, 2022). The transcripts from these self-interviews (affectionately referred to as “*The Big Monkey*”) are analysed by the co-authors on an ongoing basis. While we appreciate the perceived fragilities of such data, we also appreciate that (like in the applied field of psychology) “*enquiry into story as data*” through personal reflection “*offers another means by which to close the purported gap between practice and research*” (McIlveen, 2008, p. 2). Therefore, we argue that these curated experiences of the D&A Manager are a proxy for other traditional organisation practitioners currently “in the BA trenches”. This approach affords us the opportunity to ‘*capture the meaning*’ from this practitioner ‘*living the experience*’ (leading a BA initiative in a traditional organisation) and ‘*theorize about that experience*’ for the benefit of others (Gioia, Corley and Hamilton, 2013, p. 17).

In addition, to ‘*reflective writing*’ the study incorporates ‘*collaborative reflection*’ (c.f. Olmos-Vega *et al.*, 2022). This is primarily based on an on-going analysis of the auto-ethnographic accounts of the lead author. These auto-ethnographic accounts are continuously shared with the co-authors for the purposes of coding and in-depth analysis, where an inductive open coding approach is followed (c.f. Strauss and Corbin, 1990). The two co-authors have a long-term academic relationship with the lead author but are not linked to HEINEKEN and thereby offer an independent, outside-in perspective on the story. This ongoing analysis by the research team enables the constant comparison of interpretations of the lead author’s experiences throughout their time as the D&A Manager at HEINEKEN Ireland. Throughout this ongoing analysis, the lead author is questioned about their story, along with the assumptions and decisions made in HEINEKEN Ireland (or in the telling of the HEINEKEN Ireland story). This approach helps the lead author to uncover their “*blind spots*” and “*to see what you cannot see*” (Olmos-Vega *et al.*, 2022, p. 5).

The empirical context of this study is based on HEINEKEN Ireland, one of Ireland's leading beer and cider companies, with a proud heritage dating back to 1856 when Murphy's Brewery was established in Cork, Ireland. The organisation, which now employs approx. 400 people, joined HEINEKEN, the world's second largest brewer in 1983. HEINEKEN Ireland produces a portfolio of household name brands including Ireland's No. 1 lager Heineken®, Heineken®0.0%, Orchard Thieves, Birra Moretti, Coors Light, and a range of stout, craft and variety beers, with the portfolio generating annual sales of over €1bn at retail level. HEINEKEN Ireland has matured from little to no BA capability in 2011 to, by the end of 2020, winning the industry peer-voted "Implementation of AI Award" at the Analytics & AI Awards run by the Analytics Institute of Ireland, which is the national analytics professional body.

Finally, in an effort to structure this story (output of our collaborative reflection), we use the DELTA model proposed by Davenport and Harris (2017) to show the movement in stages (from *Analytically Impaired* to *Analytical Competitor*) across the seven capability elements (*Data, Enterprise, Leadership, Targets, Analysts, Technology, Analytical Techniques*). The output of our analysis (see Table 3) itemises the seven capability elements across the HEINEKEN Ireland journey of maturing a BA capability, which is presented across four eras (*Awakening, Building & Exploring, Advancing, Leveraging*).

## **4 Findings & Discussion**

### **4.1 The evolution of HEINEKEN Ireland BA capability**

HEINEKEN Ireland BA capabilities evolved over four distinct eras which we have labelled as Awakening, Building & Exploring, Advancing, and Leveraging.

The Awakening Era, from 2011 to 2012, could be described as the pre-BA era. The organisation and senior leadership had been under the impression that HEINEKEN Ireland already had BA because a Data & Analytics team had been formed at the start of 2011, and therefore the assumption was that everything was in place for the organisation to be data-driven. As the Awakening era progressed, the organisation

learned that this was not the case, and a strategy was required to develop a real BA capability.

The start of the Building & Exploring era was marked by HEINEKEN Ireland making the first conscious steps to becoming a data-driven organisation with the launch of its strategic '*Analytics Vision*' in 2013, to advance BA maturity by delivering '*better descriptive analytics*' (more effective and more efficient) and '*more advanced analytics*' (building on existing small-scale experiments to learn more through further experimentation and deliver value by operationalising and embedding advanced analytics). This era spans four years and saw significant changes across people, organisational structure, technology, and processes but is characterised by exploring, learning, and proving the business value of BA.

By 2016, HEINEKEN Ireland had made significant progress developing a capability to produce BA, however it became clear that progress had stalled and the BA impact on the organisation was not yet transformative. It was apparent to the D&A Manager that a '*gap*' had opened, between the organisation's capability to produce and capability to consume BA. The Advancing era from 2017, resulted from a revised Analytics strategy which focused on closing the '*gap*' and prioritising the delivery of value from BA. This resulted in rapid development of an organisational BA capability, significantly increased engagement from business stakeholders and an accelerated change in the culture from intuition-based decision making to data-informed decision making.

The fourth era of Leveraging is when data-driven decision making became the norm, with the organisation leveraging its BA capability to drive improved business performance. During this era HEINEKEN Ireland, as a recognised BA leader within the HEINEKEN group began sharing best practices and analytics solutions with the other companies in the group.



	Era 1: Awakening	Era 2: Building & Exploring	Era 3: Advancing	Era 4: Leveraging
	2011 - 2012	2013 - 2016	2017 - 2018	2019 - 2020
Data	<b>Localised Analytics</b> Efficient and robust collection of transactional data with transactional systems well integrated.	<b>Analytical Aspirations</b> Good data management across most domains and integration of some non-transactional data sources.	<b>Analytical Company</b> Data management implemented across all data domains used for analytics use cases	<b>Analytical Company</b> External data (e.g., Demographic) and unstructured (e.g., photos) routinely utilised for analytics use cases
Enterprise	<b>Localised Analytics</b> Each function conducting its own analysis with its own domain specific data.	<b>Localised Analytics</b> D&A Team emerging with set processes and implementing infrastructure.	<b>Analytical Company</b> D&A Team takes on responsibility for all BA	<b>Analytical Company</b> D&A Team takes on responsibility for all BA but remains under resourced. IT remains separate.
Leadership	<b>Analytically Impaired</b> Little knowledge of or interest in BA. No burning platform.	<b>Localised Analytics</b> Middle management enthusiastic sponsors of BA and promoters. Executive leadership less so.	<b>Analytical Aspirations</b> Senior leaders embrace BA and role model data-driven decision making	<b>Analytical Company</b> Senior leaders embrace BA and role model data-driven decision making
Targets	<b>Analytically Impaired</b> Each function using localised BA for tactical decision making.	<b>Localised Analytics</b> BA efforts more focused but not aligned with business strategic objectives	<b>Analytical Company</b> All BA activity prioritised and aligned with business strategy	<b>Analytical Competitor</b> BA a central element of HEINEKEN Ireland business strategy
Analysts	<b>Analytically Impaired</b> No specific BA skills. Technology skills in IT, functions conducting analysis with basic excel.	<b>Analytical Aspirations</b> BA role defined and recognised. Talent upskilling to achieve skills. External recruitment for BA skills.	<b>Analytical Company</b> External recruitment for BA skills, Development of internal talents, partnership with 3 <sup>rd</sup> Level institutions. External consultants providing specialised skills.	<b>Analytical Company</b> External recruitment for BA skills, Development of internal talents, Enhanced partnerships with 3 <sup>rd</sup> Level institutions BA competency developed across organisation, beyond D&A Team.
Technology	<b>Analytically Impaired</b> Robust ERP with connected CRM and operational systems. Centralised Datawarehouse. BA primarily Excel.	<b>Analytical Aspirations</b> Microsoft BI Stack, In-memory processing for BA models, Basic Predictive Analytics.	<b>Analytical Company</b> Cloud BA platforms. Open-Source Predictive Analytics.	<b>Analytical Company</b> Cloud BA platforms. Open-Source Predictive Analytics.
Analytical Techniques	<b>Analytically Impaired</b> Ad hoc basic Excel analysis.	<b>Analytical Aspirations</b> Statistical analysis, Basic predictive analytics.	<b>Analytical Company</b> Advanced Predictive Analytics routinely used for decision making.	<b>Analytical Company</b> Advanced Predictive Analytics routinely used for decision making.

**Table 3. DELTA Capability Levels across four Eras of HEINEKEN Ireland BA Capability Journey**

## **4.2 Era 1: Awakening, 2011-2012**

The Awakening era started in 2011 with the establishment of the D&A Team. However, this was a D&A Team in name only. It was comprised of three roles – a Data Management Administrator, Reporting Analyst, and the Data & Analytics Manager. These roles had previously been dispersed across different functions and were now grouped together and labelled “Analytics”. The D&A Team was organised in the commercial function and was responsible for maintaining master-data, business performance reporting, and key analysis activities such as sales forecasting. The data warehouse served as the demarcation line between the new D&A Team and IT, which remained separate and was responsible for providing transactional data from the ERP, CRM, and other operational systems to the data warehouse, at which point responsibility for extraction and usage passed to the D&A Team.

The BA focus was on Business Intelligence (BI) and the need to provide information to people across the business. All the data used for analysis was internal structured transactional data. There was no big data, no unstructured data, and no use of predictive analytics. The descriptive analytics were all excel based and very basic, with no visualisations and were distributed to business users either by email or saved to a share drive. Forecasting was exclusively conducted in excel with basic techniques and then refined by the analysts based on their experience and commercial expertise. Ultimately, while data was used to inform people, decisions were made based on the intuition of individual decision makers across the business.

While the small, centralised D&A Team conducted the reporting and analysis for strategically important domains such as sales forecasting, much of the operational reporting and analysis was dispersed and conducted within each function such as marketing, customer service or technical operations. Analysis of data in these functions was normally a secondary function of someone’s job and was not their core competency. This resulted in a generally low standard of BI which was an impediment to data-driven decision making.

Despite the economic recession at that time, HEINEKEN Ireland was performing well. The organisation’s leadership was making the right decisions to ensure that HEINEKEN Ireland grew market share and profitability each year. Therefore, there was no burning platform to provide an incentive for a data-driven transformation and there was a low awareness at all levels of the organisation (even amongst the three members of the D&A Team) of what it means to be data-driven and what BA entails. However, while the reporting and analysis had

improved somewhat, a frustration developed within the newly formed BA team that there had been no fundamental advancement in BA capability over the previous ten years and there was a curiosity to discover what the latest best practice looked like. Practitioner business publications at the time began to more prominently feature Data & Analytics articles which confirmed that HEINEKEN Ireland BA capability did not match the best analytical competitor organisations.

The first attempt at a more sophisticated BA Use Case was conducted in 2012. Up to that point, sales were forecasted by brand at a national level. Linear regression was applied to weekly sales performance which was then adjusted by the analysts to allow for any promotions or new product launches etc. The experiment was an attempt to forecast volumes for the year 2012 by using sales for each brand, not at a national level but at an individual customer level.

The experiment revealed that HEINEKEN Ireland did not have the technology or the data modelling skills to analyse volumes of data which exceeded the limitations of excel. A relatively simple model was built which used linear regression on seasonally adjusted sales data to predict weekly sales by brand for each of HEINEKEN Ireland's individual customer outlets. As well as highlighting the shortcomings in capability, that initial predictive model was a very successful proof of concept which demonstrated the value of uncovering previously hidden patterns in the data. The model produced insights which explained why a business cost of over €10m per year had been consistently over budget and informed the business to take corrective action, with the result that a budget shortfall was avoided in subsequent years. This Use Case was to prove invaluable as HEINEKEN Ireland moved into Era 2 as a demonstration to senior stakeholders of how BA could improve decision making in the organisation.

#### **4.2.1 Era Summary**

At the end of 2012, the reports and dashboards had improved, but improvement had basically meant doing the same things in an incrementally better way. The organisation was still not data-driven, but HEINEKEN Ireland had learned that BA had the potential to be truly transformative, not just for the D&A Team but for the entire organisation. However, it was now clear to the D&A Manager that continuing an evolutionary path would not deliver the BA capability required for a data-driven transformation. A holistic analytics transformation strategy was required.

### 4.3 Era2: Building & Exploring, 2013-2016

In January 2013, work commenced on preparing a BA Strategy for HEINEKEN Ireland. The business was now aware that it was not data-driven and rather than being an *Analytical Competitor*, it more resembled an *Analytically Impaired* organisation. However, it was still not clear what was required to build a BA capability and how it could improve business performance. Senior leaders were interested in exploring the possibilities but there was still no commitment or aspiration to implement a data-driven transformation (traditional business + no burning platform + little knowledge of BA = limited interest or commitment to Business Analytics).

The inputs for the strategy were a combination of practitioner and academic BA literature along with engaging senior commercial and IT leaders from three other leading CPG organisations in Ireland and Europe which at that time were considered leaders in terms of BA capability. The academic and industry literature had painted a picture of sophisticated BA landscapes with many organisations embracing BA as illustrated for example by Davenport (2006) in the *Competing on Analytics* paper. In contrast however, the reality in the other CPG organisations which were met, which were also traditional, long-established businesses, was that they were at a similar stage of maturity to HEINEKEN Ireland. However, the other organisations had all recognised the potential of BA and were already working on their own BA strategies and had started investing to build their capabilities.

The BA strategy was known internally as the “Analytics Vision” and could be summarised by *Better Descriptive Analytics* enabling *More Predictive Analytics*. Descriptive Analytics at that time was still almost exclusively Excel based. All the standard and ad-hoc reports were manually prepared in excel and emailed around the business. Better Descriptive Analytics represented better effectiveness and better efficiency. The idea was that utilising the latest BI technology and automation would free up D&A Team resource to be redeployed to deliver More Predictive Analytics (beyond the isolated ad-hoc experiments conducted in 2012) and that introducing visualisation and self-service would improve effectiveness and utilisation of BA to enable data-driven decision making. To realise the vision of Better Descriptive Analytics and More Predictive Analytics, five action areas were identified as outlined in Table 4.

In addition to the technology changes and new BA skillsets brought into the D&A Team, one of the most impactful advancements was the introduction of Agile. The new Agile mindset and way of working resulted in solutions being developed in conjunction with and in partnership with the business stakeholders, with a focus on iteratively delivering value quickly. This change from Waterfall was a big shift and took the full four years of Era 2 to implement. The D&A team members, particularly the more experienced members had been more comfortable with the traditional waterfall approach and preferred to be given clear requirements, time to develop to those requirements, and then present back their solution. However, by the end of era 2 the D&A Team had fully embraced Agile with team members observing benefits including greater ownership of BA solutions by business stakeholders, faster value delivery with the early deployment of Minimum Viable Products and greater ideation and development of skill sets as by working in groups, everyone (within the D&A Team and cross-functionally) was learning from each other.

However, by the end of 2016, progress had stalled. Due to the exponential increase in demand for new Descriptive solutions, the resource constrained D&A team was unable to focus on Predictive Analytics as envisaged. Furthermore, while some of the new predictive solutions were well received and utilised, most were not being operationalised by the business. An Analytics Gap had opened between the D&A Teams ability to produce ever more sophisticated analytics and the organisation's ability to consume them, as articulated by the Sales Manager in a feedback survey *"The D&A Team has gotten very advanced and is moving very fast – but you need to look behind you and make sure to bring the rest of us with you before moving on to the next new thing"*. Senior leadership was also starting to get frustrated as they had expected predictive analytics to have been delivering significant value at the front line.

<b>Pillar</b>	<b>Description</b>	<b>Actions</b>
Data Management	Build solid foundation of data upon which to apply BA	<ul style="list-style-type: none"> <li>• New Data Management programmes for critical areas of the business</li> <li>• Centralising Data Management activities from various business functions</li> <li>• Re-engineering data processes</li> <li>• Ingestion of data from external sources</li> </ul>
Technology	Deploy the IT tools to effectively process the data	<ul style="list-style-type: none"> <li>• HEINEKEN Ireland moved away from excel and MS PowerPivot became tool of choice to create data models for reporting and analysis. Full automation of Descriptive Analytics required an upgrade to the SQL Server DW, which was delivered in conjunction with IT, along with implementation of the MS BI Stack and rebuilding of all BI solutions.</li> </ul>
Organisation	Align D&A Team Structure and Ways of Working to future business needs	<ul style="list-style-type: none"> <li>• The D&amp;A Team which was by now four people was restructured with new specialised BA roles and Agile was introduced as the operating method.</li> </ul>
People	Develop analytical capability & skills	<ul style="list-style-type: none"> <li>• The new roles required skills which the current incumbents did not have. Funding for training was made available which allowed some team members to upskill, while others were redeployed elsewhere in the organisation and the required skillsets recruited externally.</li> </ul>
Culture	Embed Data-Driven decision making throughout the organisation	<ul style="list-style-type: none"> <li>• Acknowledgement delivering best in class BA solutions would not be enough to change the culture and way of doing things as most people in the organisation were in their roles for many years and were set in their ways.</li> <li>• Senior sponsorship for BA with executive leaders seen to be advocating for data-driven decision making.</li> <li>• Alignment of all BA activities with the business strategy.</li> <li>• Business processes, WoWs and rewards structured around BA outputs.</li> <li>• Engaging, intuitive, interactive, and visual reporting solutions and analytic tools to promote utilisation.</li> </ul>

**Table 4. HEINEKEN Ireland Analytics Vision 2013 - Action Areas**

### **4.3.1 Era Summary**

The Analytics Vision was successful in advancing the BA maturity of HEINEKEN Ireland. By 2016, all routine Descriptive Analytics were automated with new standards of visualisation, and interactivity which far exceeded the business expectations, and the team was now starting to produce insights leveraging the newly acquired Predictive Analytics capabilities. The value being delivered by BA was also beginning to be recognised. The organisation launched a new business strategy in 2015 and for the first time ever, BA was included as a key enabling pillar. Further recognition of the growing importance of BA was the fact that the D&A Team which had previously been part of the business support function was restructured as a standalone D&A function. However, while the capability of the team had grown, an analytics gap had emerged between the producers and consumers of analytics within the organisation.

### **4.4 Era3: Advancing, 2017-2018**

In the Advancing era, the focus turned to building the capability to realise value from BA, close the gap which had opened between the organisations capability to produce and consume BA, and building the data-driven culture across the organisation. During era 2 the foundations had been put in place, Descriptive Analytics had been transformed and while the D&A Team was producing some useful Predictive Analytics, the impact was not yet transformative.

In the same way that the second era had started with the development of a strategy, the third era also started with a strategy to advance BA capability. The D&A Team had built up a body of knowledge and practical experience, so the revised strategy was informed to a large degree by a retrospective conducted by the D&A Team and then enriched from the BA literature. The retrospective identified many positive changes which had been implemented during era 2 such as the move to Agile, the new BA Technology stack and improved Data Management.

The main challenges identified by the retrospective centred around three capability elements of the DELTA framework - Targets, Enterprise, and Analysts. There was some misalignment between the activities which the D&A Team were investing in and the business priorities of the organisation, some other functions outside the D&A Team

were conducting their own reporting and analysis, and the D&A Team was still only four people and not sufficiently resourced to meet demand.

The D&A team made significant changes by, jointly with the business leaders, ruthlessly prioritizing Use Cases which were closely aligned with the strategic objectives of the business. During the second era of Building & Exploration, BA Use Cases were developed which enhanced the capability of the D&A Team to produce ever more advanced BA solutions and which were expected by the D&A Team to be useful to the business. The shift in era 3 was that the business need took precedence over exploring BA capability and Use Cases which were interesting from a D&A perspective, but not aligned with the top business priorities at the time, were deprioritised, or cancelled. This included some high-profile initiatives such as a partnership with Microsoft to develop an innovative computer vision solution. This was a difficult decision for the D&A Team who got great satisfaction from working on cutting edge analytics projects and developing their own technical analytics skills.

The D&A Team was restructured to take on more of an enterprise role, with BA activities which had been in other functions consolidated within the D&A Team. There was still no incremental increase in resources but the transfer of roles from the other functions resulted in the D&A Team doubling from four to eight people. This realised efficiencies as most of the reporting and analysis that was being conducted in the other functions was manually intensive and basic, so was relatively easy to automate. This also improved the standard and consistency of BA across the organisation. The D&A Team also took on more end-to-end responsibility across the information supply chain, for example developing its own mobile apps to allow field reps collect data, including images, and built its own cloud-based databases to store the structured and unstructured data. While IT were at all times consulted, it was necessary for the D&A Team to proceed independently because IT did not at the time have the required cloud or app development capability and did not see its own remit beyond the internal systems and data.



#### **4.4.1 Era Summary**

All the capability elements of the DELTA Model need to be working together and if some advance too far ahead or fall behind the others then it is not possible to move forward developing a BA capability (Davenport and Harris, 2017). The third era of HEINEKEN Ireland's BA capability journey started off by addressing this imbalance in the DELTA elements and closing the Analytics Gap that had opened in era 2, as a result of developing the capability to produce BA faster than the organisation's capability to consume. Expanding the scope of the D&A Team also brought more of an enterprise approach and a more holistic coordination of BA activities across the Information Supply Chain.

#### **4.5 Era4: Leveraging, 2019 - 2020**

By the fourth era on HEINEKEN Ireland's BA capability journey, it was no longer necessary for the D&A Team to sell or promote the use of BA for decision making, as data-driven decision making had become the preferred way of doing things. The data and technology foundations, people and processes were in place and a data-driven organisational culture had started to replace the old intuition-based culture. By 2019 this was recognised at the senior levels of the organisation and to quote the Sales Manager, *"The analytics machine is humming"*, while according to the Commercial Director, *"Analytics is now having a real impact on the business performance"*.

The Irish D&A Team was also recognised within HEINEKEN International and was held up as a role model for how to develop a BA capability and the practices developed were regularly being shared globally. Out of 70 countries with HEINEKEN operations, Ireland was selected as the launch country for a new BA programme which was focused on scaling predictive and prescriptive analytics solutions. HEINEKEN Ireland also received external recognition winning the Implementation of AI Award which was shortlisted by the judging panel of the Analytics Institute of Ireland and then voted on by industry peers.

During this era, capabilities continued to be developed such as the skills of the team, more sophisticated BA solutions, greater use of cloud technology and greater diversity of BA Use Cases across more business domains. Joint prioritisation of Use Cases with

the senior business leadership ensured that D&A resources were allocated to the most strategic and impactful opportunities. Nevertheless, due to the developing data-driven culture across the organisation, the demand for BA solutions was growing exponentially and during 2019, the D&A Team was responding to less than 50% of the business requests for BA. This started to lead to frustration as business stakeholders found they could not get support for their operational BA requirements. This was resolved by the D&A Team establishing an Analytics-As-A-Service offering. Business stakeholders or Use Case Owners, whose BA Use Cases were not prioritised by the senior leadership were offered the option of paying for the BA solution from their own budgets. The D&A Team formed a partnership with an external analytics contractor to supplement its own resources as required. As well as providing a solution to meet demand, this also encouraged stakeholders across the business to think of BA in terms of the value it delivered, which further contributed to developing the data culture in the organisation.

In 2020 the Covid pandemic impacted economies around the world and the market which HEINEKEN Ireland operates in was significantly affected. This proved to be a catalyst which accelerated even further the data-driven transformation in the organisation. While data-driven decision making was already well established, any remaining business decision makers who had been still relying on their intuition for decision making suddenly found that they could no longer rely on their experiences in such a distorted market. If in the past there had not been a burning platform as a reason for becoming data-driven, now suddenly the platform was burnt. In the absence of any other option, even these die-hard gut-feel traditionalists converted to seeking data answers to their many business challenges. As a result of the reliance on BA to support the business operation, the D&A Team was granted an exemption when all other HEINEKEN Ireland staff took a 20% reduction in working hours during 2020. The leveraging of BA in new ways for better decision making during the Covid pandemic was extensive and ranged from identifying which customers presented the greatest credit risk, to planning new logistics operations and demand planning. With the market closed for an extended period, traditional data sources such as historical sales were no longer available so new data sources and methods needed to be developed. This required the D&A Team to be creative and develop innovative approaches in the absence of traditionally relied upon data sources. For example, sales forecasts were

informed by a diverse range of new data such as qualitative data from customer interviews to understand customer intentions, market performance in other countries which had reopened faster than Ireland to quantify actual consumer behaviour, and daily footfall data from streets in large Irish cities to understand consumer movements during various stages of lockdown. Prior to developing its BA capability, HEINEKEN Ireland would not have been able to collect such diverse data and would not have been able to build the predictive models which delivered sales forecasts which turned out to be exceptionally accurate.

It can be easy to make business decisions based on data when the data supports what the gut-based decision would have been anyway. However, the revenue projections being produced during 2020 by the HEINEKEN Ireland D&A Team based on these innovative BA solutions were significantly different to the gut-based estimates of the experienced managers and the projections from other HEINEKEN operating companies across Europe. Due to the rapidly changing business environment, HEINEKEN Ireland was required to submit revised projections to HEINEKEN International each month of 2020. It would have been much easier for the HEINEKEN Ireland senior leaders to submit projections in line with their peers, but instead they went with the BA projections. This was initially difficult for them as for the first couple of months their superiors at HEINEKEN International challenged them hard on why they thought HEINEKEN Ireland was different to other operating companies in Europe. As 2020 progressed, it became apparent that having the courage to rely on BA delivers much better business decisions, especially in situations such as a global pandemic which is so emotive and novel for humans to comprehend. By the end of 2020, the HEINEKEN Ireland projections were still different to the narrative from the rest of Europe, but rather than being challenged, HEINEKEN Ireland was lauded for its understanding of the local market and ability to accurately predict in such an uncertain environment.

#### **4.5.1 Era Summary**

The demonstrated successes of BA during the Leveraging era created an ever-growing appetite for BA to support data-driven decision making. In order to meet this demand in a sustainable way and ensure that HEINEKEN Ireland continued to accelerate on its journey to becoming an Analytical Competitor, the D&A Team was restructured at the

start of 2021. The D&A Team had by necessity assumed the role of IT for BA App Development and Cloud Data Platforms, while IT remained responsible for infrastructure and the legacy systems such as ERP and CRM. The D&A Team was merged with IT to form a new Digital & Technology function. Furthermore, to continue accelerating the democratisation of BA and bring data-driven decision-making capability closer to the front-line decision makers, responsibility for Analytics Translation moved to each of the individual business functions with the new central D&T function playing a supporting role as a centre of excellence. While the period post 2020 is beyond the scope of this paper, the HEINEKEN Ireland BA Capability journey continues.

## **5 Key Findings**

In the previous sections we have described the progression of HEINEKEN Ireland's BA capability through the four eras of Awakening, Building & Exploring, Advancing, and Leveraging. We have outlined in Table 3 the progression through the lens of Davenport & Harris (2017) DELTA BA Maturity Framework and categorised the maturity level for each of the capabilities at the end of each era. However, it is worth noting that the journey of developing BA capabilities is not just one-way improvements and maturity can also decline. For example, the Targets capability element would have been assessed at a level of Analytical Company in 2015 because the initial advanced analytics use cases were aligned with business strategy and were influencing strategic decision making. However, by the end of 2016 with subsequent advanced use cases failing to achieve the same level of utilisation the level of Localised Analytics is more reflective of the maturity level as at the end of era 2.

We now summarise the development of capability across the DELTA capability elements, but we prioritise Targets, Leadership and Analysts as these were determined by the D&A Manager to be the most significant in the HEINEKEN Ireland journey before then summarising the remaining capability elements.

### **5.1 Need for Strategic Target Alignment**

BA efforts need to be aligned with the strategic objectives of the organisation and focused on impactful use cases and applications (Davenport, 2018), but BA efforts in HEINEKEN Ireland during era 1 were predominately operational and localised. The

implementation of the first BA Vision during era 2 did result in the utilisation of BA for some strategic decision making, however the focus had been on developing the BA production capabilities such as Technology, Analysts and Data rather than consciously prioritising and aligning with business strategy. The assumption had been that delivering any increased level of BA would improve decision making and therefore be successful. By the end of era 2, HEINEKEN Ireland had learned that the “Build it and they will come” approach had not worked. The D&A Team had built it, but they (business stakeholders) did not come. The conscious decision to focus and prioritise BA investments and activity on clearly aligned business strategic objectives resulted in much greater impact through increased value delivery, greater engagement from across the business community and significantly a much greater level of support for BA from the senior leaders of the organisation.

## **5.2 Senior Leadership Buy-in**

Analytical organisations tend to have leaders who embrace BA and drive the development of a data-driven decision making culture in the organisation (Davenport, 2018). Despite being supportive of data-driven decision making in principle, a lack of awareness or interest in further developing BA capability at the senior leadership level meant that the data-driven transformation was not initially driven from the top. This slowed progress as the impact of BA needed to be proven before significant changes gathered executive level support. It could be argued that this was one of the reasons why era 2 of Building & Exploring spanned four years. Many middle managers, who were able to more closely observe the benefits and impact that enhanced BA was having on business performance became enthusiastic supporters and advocates of BA before the senior leadership of the organisation, who did not become enthusiastic advocates until era 3. However, once the senior leadership was seen to embrace and proactively support BA, this was observed to promote an acceleration in the development of the data-driven culture across the organisation.

## **5.3 Analyst Development and Sourcing**

BA talent includes a range of skills required to produce BA solutions and also consume and implement the outputs (Davenport and Harris, 2017). The D&A Team in HEINEKEN Ireland started off in era 1 without any specialised BA skills, so a priority in era 2 was implementing the structures and obtaining the skillsets for descriptive and

advanced analytics. As the sophistication of technology and analytical techniques increased, the skillset of existing analysts also needed to be constantly updated, while HEINEKEN Ireland needed to adopt a flexible approach to obtaining additional analyst external talent. The Analysts element of DELTA also includes the business consumers of BA, so a key component of developing the HEINEKEN Ireland BA maturity was improving the capabilities of people across the organisation to understand and utilise BA.

#### **5.4 Data as an Enabler Not a Restriction**

BA is simply not possible without access to relevant data of the appropriate quality. HEINEKEN Ireland matured from a total reliance on transactional structured data to routinely utilising harmonised internal and external, structured and unstructured data to deliver BA solutions based on business requirements rather than data availability (or lack of).

#### **5.5 Building an Enterprise Data Vision**

In order to increase analytical competitiveness, organisations need to adopt an enterprise approach to BA (Davenport and Harris, 2017). The journey to achieving this in HEINEKEN Ireland started with the Analytics Vision in 2013 which was the first BA strategy integrating data, technology, people and organisational elements of BA capability. As the organisation progressed through the eras, the level of enterprise coordination increased culminating in 2020 with the organisational restructure combining IT and D&A in a new function.

#### **5.6 BA Capability over BA Technology**

Technology is a fundamental enabler for BA and the absence of effective technology during era 1 was a clearly visible blocker. Rather than starting off by taking on a significant BA technology investment, the technology landscape in HEINEKEN Ireland evolved throughout the eras in response to the developing BA capability of the organisation.

#### **5.7 Embracing Advanced Analytical Techniques**

Organisations generally rely on more advanced analytical techniques as they become more sophisticated in the application of BA (Davenport and Harris, 2017). HEINEKEN

Ireland put in place the required tools and skills to enable the utilisation of a wide range of appropriate analytical techniques from interactive visualisations for descriptive analytics to machine-learning models for advanced analytics.

## **5.8 Summary of Key Findings**

It could be argued that had the learnings which HEINEKEN Ireland uncovered during its journey been known at the outset, then the maturing of BA capability might have occurred at a much faster rate. Each organisation is different and faces its own challenges to overcome on its journey to becoming an “Analytical Competitor”. However, as a result of this research we present several key watchouts to be considered by other similar organisations as they embark on their own journeys to become “Analytical Competitors”

- **DATA:** Don’t get distracted by new sources of external data. Ensure that your internal structured data is robust, fit for purpose and is being used for BA.
- **ENTERPRISE:** Don’t expect the enterprise landscape to remain static. Develop a strategy for change as the BA capabilities and objectives mature.
- **LEADERSHIP:** Don’t leave senior leadership behind. BA will ultimately only succeed by being driven from the top.
- **TARGETS:** Don’t adopt a “build it and they will come” approach. Focus on ensuring that all BA activities are aligned with business strategic objectives and prioritised on the greatest business value impact.
- **ANALYSTS:** Don’t limit skills building to those with data and/or analytics in their title, as BA is a team sport played by the entire organisation.
- **TECHNOLOGY:** Don’t overinvest in sophisticated technology at the outset, pursue an evolving ‘use case’ driven investment over time.
- **ANALYTICAL TECHNIQUES:** Don’t limit the portfolio of analytics tools and skills to one type of analytics, ensure adequate diversity for various types of analytics and constantly keep up to date with latest developments.

Finally, and possibly most importantly, is to act! Recognise that all elements of the DELTA model will never be perfect and the time for organisations to move is now. No matter which stage of BA maturity an organisation is at, they need to develop and

implement a holistic strategy to advance, while embracing constant change and adopting a willingness to learn from failures along the way.

## **6 Conclusion**

This paper presents unique research in that it leverages the richness of the lived experiences from within a large traditional organisation over a ten-year period as it develops a BA capability. Using reflective writing and collaborative reflection, HEINEKEN Ireland's BA evolution is analysed through the lens of the DELTA model. The result provides several unique insights into the organisations analytical journey, which are articulated through key learnings that can be adopted by any organisation developing their analytical capability. In addition, the richness of the lived experiences provides a specific context to each of the DELTA components, which again provide additional guidance for data-driven practitioners.



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